

1934 Official

SHORT WAVE RADIO MANUAL

edited by Hugo Gernsback
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more. A classic for experiment-
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The IC-24AT dual band handheld had three additional features that are not described in the owners manual. These have been left out of the owners manual because some countries restrict the use of the radio in these modes.

AM AIRCRAFT RECEIVE PLUS 740 to 960 MHz RECEIVE

Remove D13 from the main logic board (this diode may already be removed by ICOM in some units). This diode may already be removed in some radios. D13 is on the main logic board and is a discreet diode (one of the two in the radio) near the center of the board. It is the left discreet diode of the two on the board when the radio is open and held with the controls away from you.

Simultaneously hold "Light", "B", and "*" keys depressed and turn power on.

It is important to note that the radio will not meet specification on the out of band receive frequencies that are enabled with this modification.

DIRECT KEYBOARD ENTRY of 100 MHz FREQUENCY

Simultaneously hold "Light" and "3" keys depressed and turn power on.

CROSS BAND REPEAT (simplex)

Remove D14 from the main logic board (this diode may already be removed by ICOM in some units). The diode is a discreet diode to the right of D13 (from above) and directly beside it.

Simultaneously hold "Funct" depressed and push "C".

To turn on cross band repeat:

Hold "Funct" depressed then push "5" and then push "D".

To turn off cross band repeat simultaneously hold "Funct" and "D" depressed.

PPRAA BOOKS AUDITED!

The PPRAA financial books were audited by the audit committee as prescribed in the bylaws and found to be in order. The balance as of September 30th was \$2593.78. This is about \$600 more than last years total, however less dues is coming in because many renewed in advance of the dues increase.



This is a view of the interior (front side) after the front of the case has been removed (4 screws in back, 2 screws near PTT switch loosened only).

Carefully disconnect speaker/mike cable from PC board to allow front cover to be fully opened.

NOTE: Battery should be disconnected. Use ESD protection (grounded wrist strap, etc.).

This shows diodes as installed at the factory.

TOP

```

+--+      +--+
|  |      |  | D907
+--+      +--+

```

```

+--+      | / |      +--+
|  |----<|----|  | D913
+--+      | \ |      +--+

```

Removing this diode results in expanded UHF coverage. Coverage is from about 430-460 Mhz.

```

+--+      +--+
|  |      |  | D908
+--+      +--+

```

```

+--+      | / |      +--+
|  |----<|----|  | D912
+--+      | \ |      +--+

```

Removing this diode results in enabling the unit as a cross-band repeater.

```

+--+      +--+
|  |      |  | D???
+--+      +--+

```

Installing diode here (same direction as others) permits direct entry entry of the 10Mhz digit.

BOTTOM

AMATEUR RADIO AND THE LIMON TORNADO

During the evening of June 6th, a devastating tornado swept through Limon, Colorado and virtually destroyed all communication links with the outside world. The Severe Weather Net spotters had been tracking the storms since 1:00 p.m. with nets going on in both Denver and the Colorado Springs areas. Trained amateur radio spotters were covering the Watkins to Strasburg area, and Tim Samaras, WJ0G with his ATV camera was able to send live pictures back to the National Weather Service in Denver. When Limon radar was knocked out by the tornado, it was the SW spotters who provided all of the early reports and location findings of several other tornadoes.

Limon is a sparsely populated town out on the eastern plains of Colorado, it is about 75 miles from Denver and just a bit closer to Colorado Springs. Pete Peterson, N0AFR from Arriba was the first amateur on the scene less than 30 minutes after the tornado. He was closely followed by Norm Michaels, KA0EFF from Flagler who is th EC for Lincoln, Kit Carson and Cheyenne Wells counties. Other eastern plains Hams included Buck Rodgers, WA0DGJ and Keith Bowhan, W0DGM of Genoa and George Saum, K0GS of Agate.

A call from David Richendifer, WD0HNQ, EC for Adams County, and Deputy Director of the Denver Severe Weather Net alerted the Rocky Mountain Division Vice Director, Bill Sheffield, KQ0J that the Colorado State Patrol was requesting Amateur Radio operators in Limon. Bill alerted the Emergency Coordinators of Denver, Jeff Irvin, KB0CHT and Mike Stansberry, K0TER of Colorado Springs and within an hour of the tornado, amateurs were on route to Limon from Denver and Colorado Springs.

During the first hours following the tornado, amateur radio operators handled priority messages for the Limon Police, The Lincoln County Sheriff, the Colorado State Patrol, and other fire and rescue groups. Radio Communications were also set up at both the Mile Hi Red Cross and the Pikes Peak Red Cross with amateurs around the clock helping provide emergency and H & W communications.

The second day saw a fresh batch of amateurs arriving at Limon, including Bob Ragainm WB4ETT, DEC, Jim Lommen, KC7QY, EC for Arapahoe County and Bob Hitchens, K8VQC, EC for Douglas County. By Friday, June 8th priority communications were winding down and the amateur

radio operators were concentrating on health and welfare traffic along with coordinating communications for the Red Cross, Salvation Army and the NWS radar station in Limon.

The Pikes Peak 2 meter repeater was the only useable repeater from Limon. The Hugo repeater went out with the storm and Denver repeaters and other Colorado Springs repeater were not reachable. Mike, K0TER tried to coordinate packet, but the distance was too great for the CDS digi to work effectively, so H & W traffic was passed on HF and 450 Mhz along with 2 meters.

The following is a partial listing of some amateurs involved during this communications effort:

N0AFR, N0AMP, N0BQH, N0CYR, N0DWT, N5EZL, N0FDA, N0IER, N0IEM, N0IFK, N0ION, N0IZQ, N0KIC, N0KRW, N0JAA, N0JLH, N0LBI, W0BEG, W0DGM, W0DUM, W3TMR, K0GS, KQ0J, K0IH, K0ZL, NX0E, NW0J, W0ON, WJ0G, WR0S, WU0N, W0VI, K4UBU, KC7QY, K8VQC, K0FGM, K0PGU, K0QBA, K0TER, K0WIQ, K0UEM, KC0TR, KD0NT, AL7GQ, KA3HBK, KA7HEJ, KA7J0R, KC4KGS, KA0EFF, KA0EPM, KA0JBA, KA0MQA, KB0ADH, KB0ADG, KB0CHT, K80FNM, KD0UE, WB4ETT, WB6YXD, WD0DGJ, WD0HNQ, WA0MNL, WB0MPH, WA0TAV, WB0TUB, WA0ULE, WA0YNP.

There were so many amateurs involved from the Front Range of Colorado that it is difficult to have a complete list of all of these names and calls. But each and every amateur is to be commended for the excellent job that was done in this disaster. The distance that was traveled each day to provide the many man hours of communications was a tremendous effort and the services provided have shown to the public and to local and state officials the value of amateur radio and our capability for establishing and maintaining an effective emergency communications network within our own state of Colorado.

Bill Sheffield, K0J0J

Part Section Manager of Colorado

(Submitted by Larry Kral, N0AMP)

LIMON VOLUNTEERS RECOGNIZED BY GOVERNOR ROMER

I was surprised a few weeks ago when I opened up a small inconspicuous envelope which arrived in the mail. The card inside read: "Governor & Mrs. Roy Romer cordially invite Emergency Service Providers and Volunteers to an Open House" to be held at the Governor's Mansion on Sunday, September 9.

It didn't take me too long to realize that this somehow must be connected with helping out in the aftermath of the Limon Tornado. A couple of phone calls to others who had helped confirmed this since they had also received invitations. I was delighted to think that amateurs were beginning to be recognized for their contribution in such situations. So, on the appointed day, I drove to Denver along with my XYL Robin and son Chris.

We were greeted by Governor Romer himself as we arrived and got another chance to talk with him later. The reception was held in the garden (nice weather fortunately—it had been raining heavily when we left Colorado Springs a while earlier) and the mansion itself (impressive) was open for inspection and tours.

We quickly discovered that the reception was not only for people who helped at the Limon tornado (though there were many there who did) but also for other volunteers who otherwise would go unrecognized. For example, there were people who help with drug abuse programs and battered women's shelters.

Other than ourselves, we saw Rosie WA0MNL, Russ KB0FNM, Steve WB7VHR, Chris NX0E, and Chris' XYL Susan, as well as a few hams I'd never met before. Unfortunately, many of the other hams who had helped in Limon were unable to attend due to a prior commitment at the Teller County Hill Climb. One of those was Mike K0TER who had apparently been instrumental in getting us included in this event, and those of us who went to Limon know that no-one was more deserving of recognition than Mike.

We only stayed for about an hour, but I did get a chance to tell the Governor that I was pleased that Amateur Radio was being recognized for its contributions to the community, and he surprised me by seeming to really understand many of the things we do. So I guess he'd been well briefed!

Despite the 3 hour round-trip drive for the one hour event, we enjoyed it. And I managed to get in my 2¢ with the Governor for Amateur Radio!

Dave, N0ION

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PPRAA GENERAL MEETING

SEPT 12, 1990

Meeting called to order by president Rick WB7THT at 1900 by each member and guest introducing themselves.

Minutes were approved after the following changes:

Dave N0ION did not run the raffle Floyd KB5FCN did.

Aug 31 not Oct 31 the tower ordinance was scheduled for regulatory meeting.

The minutes were for August, not July (see needs to be replaced!)

Treasurer's report:

Previous Balance: \$2819.09

Income: \$268.00

Expenses: \$290.13

New Balance: \$2796.96 approved.

Committee reports were as follows:

RFI: Jeff N0JLH 591-6438: Nil.

EDUCATION: Bud N0DDF 475-0537: Novice classes start October 1, 1990, at 7PM at the Civil Defense Training Room in the basement of the Police Station on Kiowa. Anyone interested contact him.

VE Testing: Max KD0EL 488-9289: Pete N0LA gave update on last exam. Next exam to be Dec. 8th at Chapman College. Preregistration will be required.

O-Beat: Ron NK0P 593-8352: Still would like to have someone replace him as editor.

Trailer: Steve WB7VHR 570-1070: Need a central place to park it so work can be done on it. Anyone in town who has room for it please let Steve know so repairs can be accomplished to have it ready for emergency.

ARES: John N0KIC 635-1604: SET will be held Sept. 23, 1990.

Old Business: Hal WA0MXY gave a presentation of the tower ordinance for El Paso County. Need all who can to turn up at the planning commission meeting on September 18 at approximately 09:30 in the morning.

New Business: Steve Sortan needs Tune in the World tape for a visitor (Note: had one volunteer). Next board meeting at QTH of Dave N0ION. We need a volunteer to head up Christmas Party Committee. Next month's program will be on hospital antennas. Rod Lopez KA5DVO needs help on setting up a station at Eagleview Middle School. He will furnish the equipment, just needs technical and physical help. This has the blessing of school principal.

After short break Dave N0ION held the raffle. Prizes were won as follows:

N0ION OEM Gift Certificate

WA0MNL Free Meal at the Village Inn

N0MHQ Repeater Directory

W2TJO RG-8 Jumper Cable

N0LA 50' Extension Cord

N8CIX Check Book Balancer Program

WB7VHR OEM Gift Certificate

W0DK YAESU Hat & Generic QSL Cards

NK0P Bag of Misc Resistors

The program was a talk by Lauren KX00 on his DXpedition to Belize and his problems on getting his license and getting his gear into the country. If you were not there you missed a very humorous and enlightening presentation given in a very attention-holding manner. The meeting was adjourned at 21:10.

Submitted by Al N0CMW, Sec. PPRAA.

BOARD MEETING MINUTES

FOR 17 SEP 1990 AT QTH OF

DAVE, N0ION

The meeting was called to order by President Rick at 1900. The following board members and guests were present:

Rick WB7THT

Dave N0ION

Rosie WA0MNL

Russ KB0FNM

Ron NK0P

Al N0CMW

The program for the October meeting will be presented by Frank and Bud on hospital emergency services. The program will follow the club elections. All club officer positions are available, although Rosie will accept a nomination for re-election as Treasurer.

The board discussed a proposal to make the OBeat editor a permanent member of the board. This proposed change to the club bylaws will be published in OBeat prior to the next club meeting.

The board authorized spending \$11.45 to cover duplication costs for the antenna ordinance committee and \$49.77 for a replacement antenna at Penrose hospital.

The audit committee composed of President Rick, WB7THT and Vice-President Dave, N0ION, reviewed the treasurers books.

The next board meeting will be at Rosie's house. Meeting was adjourned at 2030 hrs.

Submitted by Al, N0CMW, Sec. PPRAA

NEW ELEMENT SETS FOR AMATEUR SATELLITES

NAME: MIR, ID: 16609, Epoch: 90269.62052311,
Incl: 51.6102, RAAN: 178.8065, Ecc: .0027077,
ARGP: 88.8872, Me An: 271.5771, M Mot:
15.59399513, Drag: .00046426, Orbit: 263953.

NAME: OSCAR 13, ID: 19216, Epoch:
90267.91311924, Incl: 56.8618, RAAN: 134.2272,
Ecc: .7032290, ARGP: 236.4530, ME AN: 36.7882,
M MOT: 2.09693968, DRAG: .000099999, ORBIT:
17499.

NAME: OSCAR 14, ID: 20437, EPOCH:
90269.23672861, INCL: 98.6922, RAAN: 345.0186,
ECCE: .0010510, ARGP: 219.6873, ME AN:
140.3534, M MOT: 14.28729240, DRAG: .00030368,
ORBIT: 35292.

NAME: OSCAR 15, ID: 20438, EPOCH:
90269.20908517, INCL: 98.6967, RAAN: 344.9580,
ECCE: .0009604, ARGP: 217.6679, ME AN:
142.3840, M MOT: 14.28440773, DRAG: .00019095,
ORBIT: 35284.

NAME: OSCAR 16, ID: 20439, EPOCH:
90269.78090516, INCL: 98.6985, RAAN: 345.6555,
ECCE: .0010817, ARGP: 216.1369, ME AN:
359.2363, M MOT: 14.28776153, DRAG: .00028801,
ORBIT: 35366.

NAME: OSCAR 17, ID: 20440, EPOCH:
90269.21137723, INCL: 98.6975, RAAN: 345.1749,
ECCE: .0010978, ARGP: 216.7771, ME AN:
143.2663, M MOT: 14.28882984, DRAG: .00031226,
ORBIT: 35291.

NAME: OSCAR 18, ID: 20441, EPOCH:
90269.19390088, INCL: 98.6987, RAAN: 345.1912,
ECCE: .0011509, ARGP: 218.6587, ME AN:
141.3785, M MOT: 14.28970819, DRAG: .00027638,
ORBIT: 35295.

NAME: OSCAR 19, ID: 20442, EPOCH:
90269.67217712, INCL: 98.6984, RAAN: 345.6942,
ECCE: .0011825, ARGP: 216.4507, ME AN:
143.5872, M MOT: 14.29042067, DRAG: .00027887,
ORBIT: 35365.

NAME: RS 10/RS 11, ID: 18129, EPOCH:
90268.87230038, INCL: 82.9220, RAAN: 254.1286,
ECCE: .0011379, ARGP: 192.5085, ME AN:
167.5832, M MOT: 13.72111766, DRAG: .00016304,
ORBIT: 163259.

73x...Rick, WB7THT

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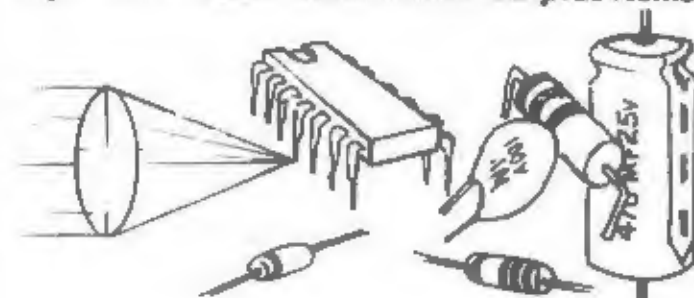
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AMATEUR RADIO CALL SIGNS

Here is the list of latest call signs issued by the
FCC, as of August 1, 1990.

District	Group A Extra	Group B Advanced	Group C Gen/Tech	Group D Novice
0	AA0BQ	KF0LY	N0MHU	KB0HKI
1	WJ1F	KC1WI	N1HYJ	KA1WGV
2	AA2AT	KF2VI	N2LCV	KB2KZH
3	WD3B	KD3TI	N3IKM	KA3WSQ
4	AB4YA	KN4NK	N4ZZD	KC4SGJ
5	AA5UA	KI5IB	N5RDS	KB5NME
6	AA6XF	KK6OB	N6ZZZ	KC6WMQ
7	AA7FO	KG7HJ	N7PIK	KB7LMF
8	AA8BX	KF8IO	N8MUG	KB8KOJ
9	WU9G	KE9YP	N9KAC	KB9JFD
Hawaii	—	AH6KN	NH6XH	WH6CIM
Alaska	—	AL7MG	NL7UD	WL7BZG
Puerto Rico	—	KP4QY	WP4YN	WP4JGT
Others	(For information call or write ARRL Hq)			

PPRAA CHRISTMAS PARTY

DECEMBER 12, 1990 AT THE ELK'S CLUB

**DINNER AT 6 PM MORE INFORMATION
IN NOVEMBER NEWSLETTER.**

74	L	Pike National Forest	168.725
75	L	Pike National Forest	169.900
73	L	Pueblo NOAA Weather	162.40
96	L	Teller Co Municipal	45.32
101	P	All Police Depts	155.37
100	P	All Police Depts	155.475
81	P	COS Police Dept	155.925
77	P	COS Police Dept	453.300
78	P	COS Police Dept	453.55
79	P	COS Police Dept	453.75
80	P	COS Police Dept	453.85
59	P	COS State Patrol	154.77
50	P	COS State Patrol	154.905
99	P	COS State Patrol	154.935
56	P	COS State Patrol	154.935
58	P	COS State Patrol	155.505
55	P	COS State Patrol	156.21
68	P	Douglas Co Sheriff	154.785
69	P	El Paso Co Sheriff	155.61
103	P	Fountain PD	453.650
104	P	Manitou PD	155.535
84	P	Manitou Springs PD	155.535
65	P	Park Co Sheriff	154.085
57	P	Police NLEEC	155.475
46	P	Teller Co Sheriff	154.71
45	P	Teller Co Sheriff	155.58
48	P	Woodland Park	154.755
47	P	Woodland Park	155.04
88	R	Burlington Northern	161.10
66	R	COS Pikes Peak Cog	161.55
90	R	DRGW Railroad	160.455
89	R	DRGW Railroad	160.92
87	R	Santa Fe Railroad	160.65
64	S	Colorado State S R	155.16
94	S	COS A One Paramedics	462.95
95	S	COS Pro Paramedics	462.975
51	S	COS St Francis Hosp	463.175
63	S	El Paso Co S and R	155.235
106	S	St Francis Hosp	465.725
62	S	Teller Co S and R	155.175
49	S	WP Shrff Amb and FDs	154.965
110	T	Gazette Telegraph	173.225
107	T	KKTV Ch Eleven	450.450
109	T	KOAA TV Ch Five	463.675
108	T	KRDO TV Ch Thirteen	450.850

CONT. FROM SEPTEMBER Q-BEAT

Snow Plows, county engineer, etc.
Inter-police depts channel
Nation-wide police common channel
Park Police Colo Springs
Detectives and Surveillance

Eastern sections and north
Downtown and west
Pueblo area Ch. 1
State-Wide Ch. 3 - Aircraft & Radar
car-to-car
COS and Pueblo CSP Ch. 2
CSP input to 156.21 rprr at Westcreek
El Paso and Teller Counties Ch. 1

Also use 154.86 154.725 154.015

154.65 input to rprr - 155.01 cc
Uses 155.01 Car-to-Car
Xmtrs at Bailey and Badger Mtn
Wldd Pk Ch. 7 - CSP Ch. 4
Input to repeater 155.58
Xmtrs at Mt. Pisgah & Tranquil Acres
PD Repeater (input on 158.865)
City Services, Ambulance, Fire, PD aux.

PP Cog Railroad Dispatcher & Trains
Moffat Tunnel - Royal Gorge lines
DNR - COS - Pueblo
Dispatcher located Newton, KS
State Search and Rescue

Flight For Life Helicopter
Search and Rescue units
Flight-for-Life Helicopter Dispatch
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